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(Re)learning to Fly: Russian Aviation in the Post-Soviet Era

Clinton D. Howie

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(RE)LEARNING TO FLY: RUSSIAN AVIATION IN THE POST-SOVIET ERA

CLINTON D. HOWIE

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INTRODUCTION

THE DISINTEGRATION of the Soviet Union and the subsequent movement towards political democracy and a market economy have profoundly impacted virtually all aspects of Russian society. The Russian aviation industry has not been immune to these changes. Since the disintegration of the Soviet Union, the Russian aviation industry has faced the difficult task of transforming from centralized bureaucratic structures, set up and operated to promote the political, military, and economic objectives of the Soviet Union and its political leadership, to independent corporate entities competing in a market system.

This Comment traces the transformation of both the Russian civil air transportation industry and the Russian aerospace industry as a result of the decline of the Soviet Union. Part One examines the characteristics of the Russian aviation industry during the Soviet era. Part Two focuses upon the implications of the Soviet Union's disintegration for the aviation industry. Finally, Part Three analyzes several strategies for the development of the Russian aviation industry in the post-Soviet era.

I. RUSSIAN AVIATION IN THE SOVIET ERA

A. SOVIET CIVIL AIR TRANSPORTATION

During the Soviet era, civil air transportation was carried out under the exclusive auspices of the Soviet national carrier Aeroflot, a government entity responsible for airports and air traffic control as well as aircraft operations.¹ Unlike American air carriers, and to a far greater extent than the government-owned airlines of many European states, Aeroflot was an arm of the Soviet state system. As one scholar pointed out,

To say that Aeroflot receive[d] protection and guidance from the Soviet government . . . is technically correct, yet an understatement. Simply put, Aeroflot [was] both a part of the Soviet government and completely controlled by it. There [was] no autonomy for civil aviation interests in a society where all sectors of the economy [were] centrally regulated.²

The role of Aeroflot as an entity of the Soviet government can be seen in its use as a tool to promote the political, military, and economic interests of the Soviet leadership. Soviet officials used Aeroflot politically in both its domestic and international capacity. Domestically, Aeroflot (as well as Soviet military aviation) served as a symbol to assert the legitimacy of the Soviet regime.³ The expansion of Aeroflot operations internationally, on the other hand, served as a demonstration of the Soviet Union's su-

¹ *Russia's 'New' Aeroflot Seeks Own Identity*, AVIATION WK. & SPACE TECH., Feb. 7, 1994, at 39.

² Betsy Gidwitz, *Aspects of Soviet International Civil Aviation Policy*, 24 SURVEY 19, 21 (1979).

³ Kendall E. Bailes, *Soviet Civil Aviation and Modernization, 1923-1976*, in SOVIET AVIATION AND AIR POWER: A HISTORICAL VIEW 167, 188 (Robin Higham & Jacob W. Kipp eds., 1977) [hereinafter SOVIET AVIATION]. For example, the Soviet Union celebrated Aviation Day on August 18, including celebrations and ceremonial appearances by Soviet officials (in a fashion similar to the May Day celebrations in Red Square), which served as displays of the scientific and technological prowess of the Soviet system. *Id.* at 190.

perpower status and, as a result of its exclusive use of Soviet-built aircraft, its technological prowess.⁴ As one Aeroflot executive stated in 1958 (at the start of the first major post-World War II expansion of Aeroflot):

The appearance on the civil air fleet lines of large numbers of new, comfortable, large-capacity passenger planes . . . is new and convincing evidence that the Communist Party and the Soviet government, true to their principles of peaceful coexistence among states with different political systems, are devoting an enormous amount of attention to the construction of aircraft for peaceful purposes, for expanding our economic and cultural ties with all states and peoples.⁵

The political importance of Aeroflot's international passenger service was evident in the large number of Aeroflot flights between the Soviet Union and its client states, many of whom were economically weak Third World nations.⁶ For example, in 1989 over one-third of the foreign states served by Aeroflot were in Africa. In the Western Hemisphere, however, Aeroflot served only six stations, excluding Cuba and Nicaragua.⁷

In addition to its political role, Aeroflot played a military role in the Soviet system as well. Most importantly, it served as a transport reserve for the Soviet Air Force.⁸ Moreover, it was also used for more direct military roles. During the Soviet invasion of Czechoslovakia in 1968, for example, Aeroflot was used to transport Soviet military and intelligence officers as well as air traffic control equipment covertly to airports in Prague, Brno, Bratislava, and Ostrava on the night of the invasion.⁹ The Soviets used the transported personnel and equipment to secure the airports, which prevented the Czechoslovaks from shutting down the airports and interfering with the airlift of Soviet personnel and equipment.¹⁰

⁴ *Id.* at 183. One analyst, for example, explains that "[t]he establishment of international air routes was analogous to the showing of the flag by the Soviet navy in foreign ports." *Id.*

⁵ Pavel Zhigarev, *SSSR-velikaya aviatsionnaya derzhava*, IZVESTIYA, July 20, 1958, at 2 (quoted in Gidwitz, *supra* note 2, at 22).

⁶ J.A. Donoghue & James P. Woolsey, *Perestroika Placing Heavy Demands on Aeroflot*, AIR TRANSP. WORLD, Aug. 1, 1989, at 20.

⁷ *Id.*

⁸ HUGH MACDONALD, *AEROFLOT: SOVIET AIR TRANSPORT SINCE 1923* 32 (1975).

⁹ Gidwitz, *supra* note 2, at 24.

¹⁰ *Id.* It is interesting to note that, in addition to providing support to the Soviet military, many of Aeroflot's international personnel were also actively involved in political, economic, industrial, and military espionage. *Id.* at 24-25. In

The military use of Aeroflot during the Soviet era is not surprising given the historical role played by the military in Aeroflot's development. At its founding in 1923, Aeroflot was established as the Inspectorate of Civil Aviation, under the direct control of the Soviet Air Force.¹¹ Moreover, throughout the Cold War period, active Soviet Air Force officers controlled Aeroflot.¹² One Western commentator summed up the role of Aeroflot when he stated that "Aeroflot . . . has been run almost like a military-airlift command, with virtually no concern for the market forces or commercial considerations that rule the life of Western airlines."¹³

While the political and military interests of the Soviet Union have been major factors in the operation of Aeroflot, economic considerations have also been important. However, unlike the commercial orientation of most Western airlines, the economic interests pursued by Aeroflot during the Soviet era were not those of the air carrier but those of the Soviet state itself. As a monopolistic entity responsible for all air services in the Soviet Union, Aeroflot's operations, as with other forms of transportation, were guided by the transportation planners of Gosplan, the Soviet state planning agency.¹⁴ Through centralized planning, Gosplan officials endeavored to create a unified system of complementary modes of transportation.¹⁵ In this unified transportation system, Gosplan sought to use each mode of transport in the most efficient manner, thereby allowing other resources to

several of the more well-publicized instances, Aeroflot personnel were expelled from France, Belgium, the Netherlands, and Cyprus. *Id.* at 25. Aeroflot's record of espionage was believed to have been a major factor in preventing or delaying Aeroflot services to Mexico, Australia, Hong Kong, and certain countries in Latin America and Africa. *Id.*

¹¹ Bailes, *supra* note 3, at 172.

¹² *Id.* From 1948 to 1959, Aeroflot was headed by Air Marshal Fedor Astakhov. *Id.* In 1959, Astakhov was replaced by E. F. Loginov, a general in the Soviet Air Force, who served until 1970 when he was replaced by his deputy, V.P. Bugaev, who eventually achieved the rank of colonel general in the Soviet Air Force. *Id.*

¹³ Donoghue & Woolsey, *supra* note 6, at 20. The intimate relationship that existed between Aeroflot and the Soviet military is also evident in the fact that the early generations of Aeroflot jet transports, such as the Tu-104, were modified versions of Soviet Air Force bombers. *Id.* Even more recent aircraft, such as the Tu-134 and the Ilyushin Il-86, exhibited the effects of military considerations on their design. *Id.*

¹⁴ Bailes, *supra* note 3, at 168.

¹⁵ *Id.* at 167.

be allocated to material production and other tasks considered of higher priority.¹⁶ As one Western analyst concluded:

Free competition, a major feature of the transport systems of the rest of the world, [was] not encouraged; on the contrary, it would appear that the general policy [was] one of coordinating all means of transport to form a comprehensive system of communications, with well-defined roles for railways, shipping, road transport and civil aviation.¹⁷

In addition to its role as a central element in the Soviet transportation system, Aeroflot also performed many other economic functions in the Soviet system. For example, Aeroflot planes and helicopters were involved in mining operations, forest-fire protection, scientific exploration, and agriculture.¹⁸

Despite the efforts of Soviet planners to organize the various modes of transportation in the most efficient manner, Soviet economic planning, the economic distortions of the Soviet system, as well as the political and military concerns of the Soviet leadership, had a deleterious impact upon Aeroflot operations. First, Aeroflot's political and military obligations often conflicted with the economic goal of transportation efficiency. Domestically, while theoretically designed for economic development, the formation of Soviet air routes was often affected by the wishes of the Communist Party leadership. As Grigory Gurtovoy, the Senior Vice-President of Transaero¹⁹

¹⁶ *Id.* at 168. The emphasis placed by Gosplan on the creation of an efficient transportation system, in which the mode of transportation selected depended upon its efficiency in carrying out a particular task, indicates the importance of air transportation in the Soviet system. Given the geographic and climatic difficulties that made the development of surface routes between population and industrial centers expensive and difficult, air transportation provided a relatively inexpensive (at least in terms of initial capital investment) and rapid means of transport. *Id.* at 169. For example, in 1960, it cost the Soviet government approximately 1.2 million rubles per kilometer for a rail route, approximately 800,000 rubles per kilometer for a highway, and only 10,000 rubles per kilometer for an air route. *Id.*

¹⁷ MACDONALD, *supra* note 8, at 35.

¹⁸ Valery Nikolaev, *The Development of Civil Aviation in the USSR—A Case-Study*, 31 *IMPACT SCI. ON SOC'Y* 299, 301 (1981). Aeroflot aircraft were also used for pesticide spraying, the sowing of wheat, barley, oats, rye, and saksaul trees (used to prevent erosion and keep sand from drifting into irrigation ditches in arid regions), spotting concentrations of fish and seals for state industries, and hunting down wolf packs threatening reindeer and local villagers in northern parts of the country. Bailes, *supra* note 3, at 190.

¹⁹ Transaero was "the first non-state-owned airline in Russia to receive government approval for scheduled domestic passenger service." *Transaero Expands Fleet, Plans U.S. Service in '95*, *AVIATION WK. & SPACE TECH.*, Feb. 7, 1994, at 48, 49.

stated, "Under the old Soviet system, development of the air transportation system was based on political considerations. The Secretary of the regional Communist Party bureaus wanted direct service to Moscow. It didn't matter whether there was one passenger, 10 or 300 on the route."²⁰ Internationally, political considerations played an even larger role in the development of Aeroflot's air transportation routes, as demonstrated by its maintenance of uneconomic routes to Soviet client states in the developing world.

Military considerations, particularly the disparate treatment accorded to civilian and military production, also had negative consequences for Aeroflot. Within the Soviet planned economy, military production received preferential treatment over civilian production in the allocation of resources.²¹ The effect of this preference can be seen in the functioning of Aeroflot during the Soviet era. For example, Aeroflot frequently was unable to accommodate the strong domestic demand for air service because of the lack of sufficient civil transport capacity.²² According to Leonid Seliverstov, director of the Department of International Relations in the Ministry of Civil Aviation during the Gorbachev era, Aeroflot's difficulties in this area stemmed from the low priority given to civil aircraft production. He claimed that Aeroflot received aircraft only when there was production in excess of that needed for the military and international sales.²³

In addition to the central importance of political and military concerns, Aeroflot was also plagued by the distortions of the Soviet economic system. Perhaps most importantly, the monopolistic nature of Soviet civil aviation was a major disincentive for efficient operations. While Aeroflot was by far the largest airline in the world, with over 500,000 employees and more than 4000 aircraft,²⁴ its labor productivity lagged far behind that of major Western carriers.²⁵ In addition to the monopolistic nature of Soviet civil aviation, the efficient operation of Aeroflot was also

²⁰ *Id.* at 48.

²¹ ARTHUR J. ALEXANDER, *THE CONVERSION OF SOVIET DEFENSE INDUSTRY* 2 (1990).

²² Donoghue & Woolsey, *supra* note 6, at 21.

²³ *Id.* Seliverstov also claimed that, in addition to its aircraft needs, Aeroflot suffered from a shortage of fuel and spares, especially engines, low aircraft utilization, and high maintenance requirements. *Id.* at 20.

²⁴ Kyohei Shibata, *Airline Privatization in Eastern Europe and the Ex-USSR*, 30 *LOGISTICS & TRANSP. REV.* 167 (1994).

²⁵ Bailes, *supra* note 3, at 172.

inhibited by the lack of an adequate cost mechanism in the Soviet system. For example, the Soviet-made jetliners used by Aeroflot were generally much more inefficient in terms of fuel consumption than similar Western aircraft.²⁶ But, under the Soviet system, fuel prices were kept artificially low, which eliminated the need for Aeroflot to seek more fuel-efficient aircraft.²⁷

As this discussion indicates, civil aviation in the Soviet Union differed vastly from that of Western states. Not only did Aeroflot maintain a monopoly over all aspects of civil aviation, but the economic, political, and military interests of the Soviet state placed further demands on Aeroflot that are not faced by air carriers in Western states.

B. THE SOVIET AEROSPACE INDUSTRY

Just as civil aviation in the Soviet Union was the sole responsibility of Aeroflot; the production of Soviet aircraft, both civil and military, was the responsibility of the Ministry of Aircraft Production.²⁸ The Ministry oversaw the operations of aircraft design bureaus and testing facilities, as well as manufacturing plants.²⁹

As with civil aviation, the Soviet aerospace industry differed vastly from that of Western states. Three of the primary differences were in the areas of ownership, structure, and emphasis. First, the aircraft production industry in the Soviet Union was exclusively state-owned.³⁰ This fact is not surprising given the nature of the Soviet economic system.

Second, the Soviet aerospace industry was structured differently from the aerospace industries in Western nations, with the design, testing, and manufacturing cycles organized independently from one another.³¹ As a result of this structure, each individual entity was responsible for its particular portion of production, as opposed to the project as a whole.³² For example,

²⁶ Gidwitz, *supra* note 2, at 21-22.

²⁷ *Vnukovo Airlines Pursues Independent Strategy*, AVIATION WK. & SPACE TECH., Feb. 7, 1994, at 42.

²⁸ Gidwitz, *supra* note 2, at 21. The Ministry of Aircraft Production was closely related to Aeroflot given the fact that it was responsible for the production of all the aircraft used by Aeroflot for civil aviation. *Id.*

²⁹ Otto P. Chaney, Jr. & John T. Greenwood, *Patterns in the Soviet Aircraft Industry*, in SOVIET AVIATION, *supra* note 3, at 265, 265.

³⁰ *Id.*

³¹ David R. Markov, *The Radical Reshaping of Russian Aerospace*, A.F. MAG., Aug. 1993, at 60.

³² Alexander Bolonkin, *Russia Looks West*, AEROSPACE AM., Mar. 1993, at 13.

while the Antonov design bureau in Kiev was responsible for the design of certain aircraft, most notably civil and military transports, most of the design testing was carried out at the LII/Gromov Flight Test Center at Zhukovsky.³³

Third, the Soviet aerospace industry was much more heavily focused upon military production. This emphasis upon military production was part of a larger trend that existed throughout the Soviet economy. Since at least the 1930s, the Soviet government placed primary emphasis upon defense and heavy industry.³⁴ Not only was the Soviet military given priority in access to materials and the outputs of other enterprises, but the Soviets also channeled advanced foreign equipment and high-quality workers and managers towards the military sector.³⁵

In addition to its priority in receiving scarce resources, the Soviet military-industrial complex also benefited from its privileged access to scientific research and technology. According to one analyst, "[t]he Soviet defense industry, especially aerospace, was a very classified, isolated branch of industry. All inventions and innovations were kept top secret. Spinoff of innovations for consumer products was not encouraged. Only the defense industry used the secret chips, metals, alloys, materials, equipment, and technology."³⁶

As these factors indicate, the structure and development of the Soviet aerospace industry, like Soviet civil air transportation, was greatly influenced by the Soviet system. Not only were the commercial variables that influenced the aviation industries of Western states largely absent, but the political and military interests of the Soviet leadership also played an extremely important role.

³³ Jeffrey M. Lenorovitz, *Money Problems Delay AN-70 Maiden Flight*, AVIATION WK. & SPACE TECH., June 27, 1994, at 61.

³⁴ ALEXANDER, *supra* note 21, at 3.

³⁵ *Id.*

³⁶ Bolonkin, *supra* note 32, at 42. According to Viktor Glukhikh, chairman of the Russian Federation's State Committee on the Defense Industries, the military-industrial complex in Russia still accounts for 60% of the national scientific potential and consists of over 2000 production facilities and 660 research centers, despite the decline of the USSR and Russian efforts to shift resources from military to civilian production. Igor Khripunov, *Russia's Arms Trade in the Post-Cold War Period*, WASH. Q., Autumn 1994, at 79.

II. THE BREAKUP OF THE SOVIET UNION AND ITS IMPLICATIONS FOR RUSSIAN AVIATION

Given the importance of the Soviet system in the development of Russian aviation, the breakup of the Soviet Union and Russia's movement towards a market economy have had a tremendous impact on civil aviation and the aerospace industry within Russia. The changes in political and economic conditions within Russia open up the possibility of correcting many of the shortcomings that resulted from the demands of the Soviet system. These changes, however, have also ushered in an era of tremendous uncertainty for Russian aviation.

A. CIVIL AIR TRANSPORTATION

The breakup of the Soviet Union has had an enormous effect upon civil air transportation in the Russian Federation. With the decline of the centralized Soviet system and Russia's efforts to establish a market economy, a process of fundamental transformation has begun that has affected virtually all aspects of the industry, including air transportation, ground support functions, and governmental oversight and regulations.

Perhaps most significantly, the disintegration of the Soviet Union has resulted in the fragmentation of civil air transportation from a system of a single carrier, Aeroflot, into one consisting of, at the end of 1993, 320 operators (286 within Russia itself).³⁷ These newly-independent airlines include "baby-flots," which are regional spinoffs of the centralized Aeroflot system,³⁸ as well as start-ups such as Moscow-based Transaero.³⁹

³⁷ Jeffrey M. Lenorovitz & Boris Rybak, *Profits Overtake Safety at Some NIS Carriers*, AVIATION WK. & SPACE TECH., June 13, 1994, at 36.

³⁸ Lee Hockstader, *U.S. to Evaluate Russia's Air Safety, at Its Request*, INT'L HERALD TRIB., Aug. 29, 1994. The "baby-flots" remain largely state-owned. *Id.* However, steps are being taken to eventually privatize many of the airlines. For example, Aeroflot Russian International Airlines (ARIA), which is a spinoff of the Aeroflot directorate that had primary responsibility for international transport, has been conducting discussions with the Russian government regarding the formation of a joint stock company as a step towards privatization. *Russia's 'New' Aeroflot Seeks Own Identity*, *supra* note 1, at 39. Similarly, Vnukovo Airlines (VAL), which is essentially the former Aeroflot air transport group at Moscow's Vnukovo Airport, plans to privatize this year, offering a majority of its voting stock to both Russian and foreign investors. *Vnukovo Airlines Pursues Independent Strategy*, *supra* note 27, at 42.

³⁹ Jeffrey M. Lenorovitz & Boris Rybak, *New Phase Begins for NIS Airlines*, AVIATION WK. & SPACE TECH., Feb. 7, 1994, at 36.

The fragmentation of Aeroflot and the emergence of independent carriers have created serious problems for civil air transport in Russia. To a large extent, these problems result from the difficulties faced by the hundreds of new carriers, many of which are extremely small and poorly financed, participating in a chaotic economic system. As Alfred Malinovski, head of the Russian pilot's union stated:

We are a country of extremes. We were thrown from the old state monopoly system right into a market without any rules. . . . We interpreted the concept of a market in the most radical way by breaking up Aeroflot into 300 companies which turned out to be unmanageable. You can do that sort of thing with a state-owned laundry monopoly, but not with civil aviation.⁴⁰

More specifically, three interrelated problems have emerged as a result of the fragmentation of Aeroflot. First, and most importantly, the breakup of Aeroflot has raised serious concerns about the safety of civil air transportation in Russia. According to a report by the Interstate Aviation Committee (IAC), one in 230,000 passengers on CIS airlines were killed, a mortality rate approximately ten times that of the world average.⁴¹ Moreover, Anatoly Bondarve, Deputy Director for Aviation Safety in the Department of Air Transportation, reports that the problem appears to be getting worse, with the number of fatalities increasing from 250 in 1992 to 348 in 1993, to 218 in just the first quarter of 1994 alone.⁴² According to Vladimir Seleznev, Director of Flight Safety for Aeroflot Russian International Airlines, the decentralization of air carriers has made it extremely difficult for the Russian government to assure flight safety.⁴³

The safety problems that have emerged are directly related to the financial difficulties faced by many of the new Russian air carriers. While the airlines remain, for the most part, state-owned,⁴⁴ many lack the financial resources necessary to repair,

⁴⁰ Leyla Boulton, *Skies Without Limits: A Look at the Problems Facing Airlines in the Former Soviet Union*, FIN. TIMES, Apr. 9, 1987, at 7.

⁴¹ Charles Recknagel, *Airline Went from Being the World's Biggest to One of 320; Russian Airline Aeroflot*, TRAVEL WKLY., July 4, 1994, at 12.

⁴² Aleksandr Vitkovsky, SEVODNYA, July 30, 1994, at 7 (reported in CDSP, Aug. 24, 1994). According to the Interstate Aviation Committee, however, only 43 fatalities occurred in the first half of 1995, down from 231 for the same period in 1994. *Russia: Death Toll in Russian Air Accidents Fall Sharply*, BBC, Aug. 4, 1995.

⁴³ Recknagel, *supra* note 41, at 12.

⁴⁴ Many variations of ownership exist in the Russian airline industry. While some of the "baby-flots" are owned by the Russian Republic, others are owned by

maintain, and operate the planes that they inherited.⁴⁵ One stark example of these financial difficulties and their effect on the safety of Russian civil aviation has been the problem of air crashes that have resulted because of aircraft running out of fuel while in flight. According to the IAC, this problem has been caused, in part, by the need to pay cash for jet fuel at airports unless prior arrangements have been agreed upon with a specific facility, which leads flight crews to try to "stretch" fuel reserves instead of diverting to an intermediate airport for at least a partial refueling.⁴⁶

Second, the breakup of Aeroflot and the financial difficulties faced by many of the new airlines hinder attempts by the airlines to replace aging Soviet-made aircraft with a new generation of jetliners. Approximately eighty percent of the medium and long-haul transports operated by Russian airlines have exceeded their original service life limits and, according to data compiled by the State Research Institute for Civil Aviation (GosNIIGA), fifty percent of the operational fleet should be retired in the next five years.⁴⁷ A Boeing study estimates the cost of this replacement, for the former Soviet Union as a whole, to be as much as \$60 billion during the next twenty years.⁴⁸ Given the

regional or local governmental entities under arrangements made with the Department of Transportation. *Id.*

⁴⁵ Lee Hockstader, *FAA Inspection Team to Check Russia's Troubled Civil Aviation*, WASH. POST, Aug. 27, 1994, at A18. The financial position of many of these new airlines is so bad that they continue to fly with their original Aeroflot markings because they cannot afford the approximately \$100,000 needed to paint each plane with its new colors. Recknagel, *supra* note 41, at 12.

⁴⁶ Lenorovitz & Rybak, *Profits Overtake Safety at Some NIS Carriers*, *supra* note 37, at 37. For example, an accident occurred on September 25, 1993, when an Antonov An-12 charter flight from Khabarovsk to Tyumen crashed on its approach to Tyumen's Roshino Airport. According to the IAC report on the accident, the crash occurred because of "a complete consumption of fuel" and the crew was aware of the problem but did not make an intermediate stop because it would have required additional payment for fuel and handling. *Id.* at 37-38.

⁴⁷ Boris Rybak & Jeffrey M. Lenorovitz, *Most NIS Transports Past Service Life*, AVIATION WK. & SPACE TECH., Aug. 1, 1994, at 31. The problem of antiquated aircraft can be traced back to the Soviet era and the Soviet system's emphasis on military over civil production. According to one expert, Aeroflot needed an annual supply of approximately 300 airplanes during the 1980s to maintain its fleet age at a constant but received a total fewer than 600 jetliners and approximately 1000 turboprops (750 of which were 19-seat Czechoslovakian commuterliners) during that ten-year period. Donoghue & Woolsey, *supra* note 6, at 20.

⁴⁸ *Western Airframe Firms Find Strong Potential*, AVIATION WK. & SPACE TECH., June 13, 1994, at 44.

financial difficulties of Russian air carriers, however, it is unclear how these tremendous costs will be borne.

Third, despite the breakup of Aeroflot, the service shortcomings endemic to civil air transportation during the Soviet era remain commonplace.⁴⁹ For many new airlines, the breakup of Aeroflot has not necessarily resulted in competition. Given the regional nature of many Russian carriers, competition on many domestic routes is largely absent, thereby reducing the incentives for service improvements.⁵⁰ Additionally, the managers of many Aeroflot spinoffs have simply not addressed the need to improve service. As two experienced passengers observed:

One desire of many airline managers is the acquisition of western-built jets, allowing their carriers to fly the same equipment as used elsewhere in the world. However, some managers do not seem to understand that the introduction of such transports alone will not make a difference if an airline continues the ways of the old Soviet Aeroflot by providing bad food, served by cabin crews who otherwise ignore the passengers.⁵¹

In addition to the fragmentation of Aeroflot, the breakup of the Soviet Union has also altered the relationship between air carriers and ground-based support services. Under the Soviet system, Aeroflot had full responsibility for building and maintaining airports and air-traffic control for all civil aviation.⁵² Recent changes, however, have resulted in uncertainty surrounding the future responsibilities for these functions and their relationship with the airlines that use their facilities and services.

⁴⁹ Poor service was a virtual trademark of Aeroflot during the Soviet era. As late as the 1960s, foreign passengers often encountered domestic flights where oxygen masks, seat belts, lifejackets, and safety directions were lacking. Bailes, *supra* note 3, at 178. In a more humorous example, the chicken served on Aeroflot was nicknamed 'Aeroflot hen' because, as one Russian passenger explained, "We like to joke that the Soviet government has some secret factory that mass produces these Aeroflot hens. . . . Otherwise, it's difficult to explain how Aeroflot has been consistently able to serve such scrawny, rubbery chickens for all these years." Jeffrey M. Lenorovitz, *Inconsistent Service Marks Carriers in NIS*, AVIATION WK. & SPACE TECH., June 13, 1994, at 45.

⁵⁰ Boulton, *supra* note 40, at 7. Of course, the larger airlines that serve more popular routes have made much greater efforts to improve service given the fact that they face competition from not only other domestic carriers but major international carriers as well. Lenorovitz, *supra* note 49, at 45. Moscow-based startup Transaero, for example, uses multilingual cabin crews trained at Air France. *Id.*

⁵¹ Lenorovitz, *supra* note 49, at 45.

⁵² Bailes, *supra* note 3, at 170-71.

This uncertainty is extremely significant for a number of reasons. First, Russia's aging airports are expected to require considerable attention in the next few years.⁵³ In fact, some 1500 airports in Russia are judged to be in critical need of improvement because of the lack of proper facilities and outdated or obsolete equipment.⁵⁴ According to Vadim Zamotin, the Director of the Russian Department of Air Transportation, these improvements will cost an estimated 7.78 billion rubles in December, 1993 values (approximately \$6.48 billion).⁵⁵ However, it is unclear who will bear the ultimate responsibility for these improvements. As a result of the need for modernization, the Russian government has given priority to the privatization of a number of airports formerly operated by Aeroflot.⁵⁶ While this strategy may allow the Russian government to shift some of the costs of development to private enterprises, both domestic and international, the success of this strategy and the ability of the Russian government to fund the development of those airports that remain under state ownership is uncertain.

Second, the questions surrounding aircraft support services also raise serious safety questions, particularly in regard to air traffic control. With Aeroflot no longer responsible for all aspects of civil aviation, it is extremely important for the Russian government to establish an effective air traffic control system to coordinate the air routes of the various Russian air carriers. This fact was reinforced in a recent bilateral review of the Russian aviation industry by Russian officials and American officials from the Federal Aviation Administration (FAA) and the National Transportation Safety Board (NTSB), which stated that "[i]t is critical that high levels of Russian government make strong and decisive decisions to establish a single focal point on

⁵³ Paul Duffy, *In the Aftermath of Aeroflot: New Airlines Based in the Commonwealth of Independent States*, AIR TRANSP. WORLD, July 1992, at 36.

⁵⁴ Lenorovitz & Rybak, *supra* note 39, at 38.

⁵⁵ *Id.* By the middle of 1992, none of the approximately 3000 airports formerly served by Aeroflot were equipped to Category III standards and only 10 were equipped to Category II standards. Duffy, *supra* note 53, at 37.

⁵⁶ Shibata, *supra* note 24, at 168. It is unclear, however, how successful this privatization effort will be. British Airways has entered into a joint venture that includes development of Domodedovo Airport, and Lufthansa participates in a consortium for the development of Sheremetyevo airport. *Id.* Vnukovo Airlines, however, split from Vnukovo Airport before beginning the process of privatization. *Vnukovo Airlines Pursues Independent Strategy*, *supra* note 27, at 42.

implementing the air traffic system."⁵⁷ According to the report, the Russian Commission for Air Traffic Regulation (Rosaeronavigatsiya) should be given the sole responsibility for air traffic control.⁵⁸ As with airport improvements, however, it remains to be seen how the Russian government will finance this project. The evaluation team noted that the air-traffic control sector faced a shortage of resources, which led to a range of problems, including a lack of English-language training and wide disparities in funding of air traffic control facilities.⁵⁹

In addition to its effect upon air carriers and support services, the disintegration of the Soviet Union also has tremendous implications for the regulation and oversight of civil aviation by state officials. While Aeroflot was both the regulatory body and the sole operator of civil aviation in the Soviet Union, it was the responsibility of the Ministry of Civil Aviation.⁶⁰ With the demise of the Soviet Union, the Ministry of Civil Aviation's regulatory functions were taken over by the Department of Air Transportation and the Interstate Aviation Committee, which is responsible for the coordination of policies between the former Soviet republics.⁶¹ Despite the assumption of regulatory authority by these organizations, however, oversight of the civil aviation industry remains a serious problem.

A major obstacle to effective regulation, as with the other issues discussed in this section, is an acute lack of financial resources. For example, the certification and inspection division within Russia's Department of Air Transportation (DAT) has a staff of approximately 1650 inspectors to oversee Russian airlines which, according to the head of the division, is only one-half to one-third the number needed for adequate inspections.⁶² Vladimir Zamotin, Director of the DAT, states that government spending has lagged due to budgetary and organizational difficulties and that only 500 billion rubles (\$166 million) out of an

⁵⁷ Jeffrey M. Lenorovitz, *U.S. Lifts Travel Ban on Russian Airlines*, AVIATION WK. & SPACE TECH., Oct. 24, 1994, at 28.

⁵⁸ Ramon Lopez, *Russia Safety Study Advises Swift Action*, FLIGHT INT'L, Oct. 26, 1994, at 6.

⁵⁹ Lenorovitz, *supra* note 57, at 28.

⁶⁰ Shibata, *supra* note 24, at 167.

⁶¹ *Id.* The Interstate Aviation Committee was created in 1991 to deal with aircraft certification, flight safety, and accident investigation. Lenorovitz & Rybak, *supra* note 39, at 36. Its members include: Russia, Azerbaijan, Armenia, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Uzbekistan, and Ukraine. The Baltic states of Latvia and Estonia hold observer status. *Id.*

⁶² Recknagel, *supra* note 41, at 12.

originally planned 6 trillion rubles would be invested in air safety improvements.⁶³ Similarly, the staff at the State Scientific Research Institute for Civil Aviation (GosNIIGA), a state agency responsible for flight safety research, has been reduced from 3500 in 1988 to only 1500 in 1994.⁶⁴

The bilateral US-Russian study of the civil aviation industry discussed the shortcomings in Russian certification and inspections specifically in its findings. It concluded that adequate resources were needed to combat the critically low level of inspectors and to keep qualified personnel within the division from taking better-paying jobs outside of the government.⁶⁵

In addition to the lack of adequate funding, the regulation of the civil aviation industry has been hindered by the lack of clearly demarcated authority granted to the various regulatory bodies. This has resulted in, according to the CIS Flight Safety Commission, "a weakening of the role of air carrier flight safety inspections in air carriers" and a general decrease in the efficiency of state supervisory bodies.⁶⁶ Anthony Broderick, FAA Associate Administrator for Regulation and Certification, for example, stated that "[t]here is, at the most important working and policy levels, a real need for clarification of the roles, responsibilities and authorities of these organizations and their employees."⁶⁷

The lack of clearly demarcated authority between the various entities set up to regulate air transportation in Russia is not surprising given the legal limbo that exists in Russia today. Despite the dramatic changes that have occurred in the Russian air transportation industry, the Russian government, at the time of this writing, has yet to implement a new Air Code to regulate the industry. Instead, Russia has continued to rely largely upon the regulations issued by the Soviet Union before its disintegration.⁶⁸ While these regulations may have been appropriate for the Soviet system, where monetary considerations were virtually non-existent and the regulator and regulated were a single en-

⁶³ Lenorovitz, *supra* note 57, at 28.

⁶⁴ Paul Duffy, *Expensive Cuts: Budget and Personnel Cuts in Russia's State Scientific Research Institute for Civil Aviation*, FLIGHT INT'L, July 20, 1994, at 34.

⁶⁵ *Id.*

⁶⁶ Jeffrey M. Lenorovitz, *Former Soviet Union Expands Air Safety Ties with West*, AVIATION WK. & SPACE TECH., Jan. 25, 1993, at 57.

⁶⁷ *Russia's Air Transportation System Needs Immediate Reform*, AVIATION DAILY, Oct. 17, 1994, at 79.

⁶⁸ *Press Conference Devoted to the Corporatization of Aeroflot*, FED. NEWS SERV., Aug. 17, 1994.

tity, they are not as well-suited to a competitive market system in which commercial pressures can induce air carriers to adopt risky patterns of behavior. The CIS Flight Safety Commission, which reports to the Interstate Aviation Committee, pointed out this fact in a 1993 report, where it stated that some new carriers "do not follow the traditions of flight safety promotion and lack risk awareness They strive for cutting their operation costs by all means, including expenses for maintaining flight safety, just for the sake of immediate profit."⁶⁹ The joint US-Russian study of Russia's aviation industry recognized the necessity of adopting new regulations when it recommended the early adoption of a new Russian Air Code.⁷⁰

B. RUSSIA'S AEROSPACE INDUSTRY

As with civil air transportation, the Russian aerospace industry has entered a period of dramatic change as a result of the decline of the Soviet Union. Perhaps most significantly, Russian aerospace firms have seen state orders and financing for military hardware decline by an average of seventy percent in the past four years.⁷¹ Given the fact that the Soviet military has been the major recipient of goods from the Russian aerospace industry, this reduction has had tremendous repercussions on the industry.⁷² This is especially true in regions that were economically dependent upon defense industries. For example, the economy of the Udmurt Republic was over eighty-five percent defense-related.⁷³ Other areas that were heavily dependent upon defense production, and therefore especially hard hit by the decline of state orders, are Mordovia, Mariy El, Nizhnegorodskaya Oblast, and Tatarstan.⁷⁴

As a result of this decline, aerospace firms in Russia, as well as the Russian government itself, adopted three major strategies

⁶⁹ Lenorovitz, *supra* note 66, at 59.

⁷⁰ Lenorovitz, *supra* note 57, at 28. The joint team noted, however, that "[n]ot surprisingly, the proposed Russian air law lacks the degree of specificity of roles and responsibilities of the civil aviation organizations that are ultimately desirable for a civil aviation system operating in a free market economy." *Id.*

⁷¹ Khripunov, *supra* note 36, at 79.

⁷² Chaney & Greenwood, *supra* note 29, at 285. Given the fact that military production provided a large portion of industrial output in Russia, the rapid decline in defense orders led to a sharp drop in total industrial production. Shlomo Maital & Ben-Zion Milner, *Russia and Poland: The Anatomy of Transition*, CHALLENGE, Sept. 1993, at 40.

⁷³ Khripunov, *supra* note 36, at 85.

⁷⁴ *Id.*

for survival: increased emphasis upon arms exports, conversion from the production of military goods to civilian and consumer goods, and the privatization of state enterprises.

1. *Arms Exports*

The promotion of arms exports represents a popular solution to the decline of state orders for both political leaders and managers of Russia's defense industry. President Boris Yeltsin, for example, has described arms exports as a potential "shock absorber" to lessen the impact of state procurement reductions.⁷⁵ In his first ever state of the union address before both chambers of the Russian Federal Assembly in February 1994, Yeltsin explicitly conditioned Russia's commitment to control international weapons transfers upon "observance of the Russian commercial interests in this area."⁷⁶

For managers of Russia's defense industries, as with Russian politicians, the expansion of arms sales is a potential cushion for the impact of the reduction in defense orders by the Russian government. Additionally, international arms sales are popular with defense industry managers because arms exports could allow many in the industry to avoid the necessity of conversion to the production of consumer goods. Many Russian managers are reluctant to shift to civilian production because of the uncertainties surrounding the conversion process⁷⁷ as well as their distaste for commercial concerns and the need to shift from production of state-of-the-art military hardware to more common consumer and civilian goods.⁷⁸

⁷⁵ Clifford Gaddy & Melanie Allen, *Dreams of a Salesman: The Russian Drive to Increase Arms Exports*, BROOKINGS REV., Sept. 22, 1993, at 36.

⁷⁶ ROSSIISKAYA GAZETA, Feb. 25, 1994 (quoted in Khripunov, *supra* note 36, at 88). Russian politicians from across the political spectrum have also stressed the importance of arms exports for Russian industry. Aleksandr Rutskoy, a Yeltsin opponent, has stated that "all shame should be brushed away, and military equipment should be sold to the states that want it." Gaddy & Allen, *supra* note 75, at 36. Likewise, Arkady Vol'skiy, a leader of centrist forces and co-founder of Civic Action has gone on record in support of the expansion of arms sales. *Id.*

⁷⁷ While the Russian aerospace industry is technologically advanced, it is likely that relatively few of Russia's military enterprises will be able to transform into makers of quality civilian products at competitive prices. See Richard W. Stevenson, *Russia's Arms Makers Try Change*, N.Y. TIMES, May 2, 1994, at D3.

⁷⁸ *Russia: Swords and Ploughshares*, ECONOMIST, Jan. 16, 1993, at 52.

2. Defense Conversion

Despite its uncertainties and the attractiveness of continued military production, conversion to the production of non-military goods represents a second strategy pursued by government officials and defense industries to mitigate the effects of the decline in defense procurement by the Russian government. This is especially true with aerospace companies, which are proving most adept at the conversion process.⁷⁹

The conversion efforts of Russian aerospace firms have been supported by both the Russian government and foreign governmental and non-governmental actors. The Russian government's policy has been to support selected companies deemed to be internationally competitive.⁸⁰ For example, Russia has provided significant financial backing to the AviaStar Ulyanovsk Aviation Industrial Consortium, which is a production site for the Antonov An-124-100 cargo transport and the Tupolev Tu-204 medium-haul aircraft.⁸¹ The Russian government hopes that these internationally competitive industries will be able to earn hard currency that can then be used to further the general process of conversion.⁸²

In addition to the support of the government, Russia's aerospace industry has also received foreign support for its conversion efforts. This includes support from both Western governments as well as private companies that seek business opportunities within the Russian Federation. The United States government, for example, announced plans in 1994 to fund several pilot projects to encourage the transition towards civilian production.⁸³ This assistance will be carried out under the Nunn/Lugar Act for defense conversion projects.⁸⁴ The projects that will be funded include \$20 million to create a prefabricated housing industry and a number of \$2 to \$3 million

⁷⁹ Patricia Kranz & Peter Galuszka, *Russia's Arms Makers Squirm in Their Civvies*, BUS. WK., Aug. 22, 1994, at 27.

⁸⁰ Boris Rybak, *Russia Pledges Support for Ulyanovsk Factory*, AVIATION WK. & SPACE TECH., July 12, 1993, at 34.

⁸¹ *Id.* Government support for AviaStar is scheduled to include: financial support for the construction of production facilities and for logistics support; preferred loans for the construction of housing for employees; a 44% discount in payments for electrical power; and annual loans to support full-scale Tu-204 production and to diversify AviaStar's manufacturing activities. *Id.*

⁸² Markov, *supra* note 31, at 32.

⁸³ *Perry Outlines Plans to Aid Russian Defense Conversion*, AVIATION WK. & SPACE TECH., Mar. 28, 1994, at 62.

⁸⁴ *Id.*

grants to American companies starting up commercial ventures with Russian defense contractors.⁸⁵

Perhaps even more important than assistance from foreign governments is the role of foreign companies as a source of investment. Foreign investment may be critical to the success of the conversion process. According to Mikhail Malei, former presidential adviser on defense conversion, the process of conversion will take fifteen years and cost approximately \$150 billion.⁸⁶ Given the financial difficulties faced by the Russian government and industry, Western investment may be critical to adequately funding this process.⁸⁷ Among the more significant instances of American involvement in the Russian aerospace industry has been the linkup between Pratt & Whitney, the Aviadvigatel engine design bureau, and the Perm Motors production factory to design the PS-90P aircraft engine, which will be offered for use on the Ilyushin Il-96M, Il-96-3000, Il-76, and Tupolev Tu-204 aircraft.⁸⁸

3. Privatization

The third major strategy pursued by the Russian government is the privatization of state-owned enterprises. The aim of these efforts is to maximize the productive capacity of the Russian economy through the internalization of costs and benefits for

⁸⁵ *Id.*

⁸⁶ *Russia: Swords and Plowshares*, *supra* note 78, at 52.

⁸⁷ According to Thomas J. Hajek, program director for International Commercial Engine Business Ventures at United Technologies' Pratt & Whitney, "[i]t is economically impossible for the former Soviet Union's industry to continue as it is today, and I believe the companies that partner with the West have the best chance of remaining in existence." Jeffrey M. Lenorovitz, *Western Partnerships Key to Russian Industry Survival*, AVIATION WK. & SPACE TECH., May 30, 1994, at 76.

⁸⁸ The involvement of Pratt & Whitney with Russian engine manufacturers is especially important given the past weaknesses of Russian aircraft engines vis-a-vis those produced in the West. See Duffy, *supra* note 53, at 39. Problems with Perm Motor's PS-90A engine, for example, have jeopardized Russian plans for the introduction of new airliners. For example, engine problems have held up the flight tests for the new Tupolev Tu-204 and recently forced a Tu-204 carrying aviation journalists on a test flight from Sochi to Moscow to make an emergency landing at Rostov-na-Donu in southern Russia. *Tupolev-204's Engine Trouble Could Ground Russian Airliner Programme*, RUSSIA EXPRESS-PERESTROIKA: EXECUTIVE BRIEFING, Dec. 19, 1994. Engine problems also curtailed flights of other aircraft using the PS-90A. *Id.*

the individual enterprises.⁸⁹ To date, approximately seventy percent of Russia's industrial enterprises have been privatized.⁹⁰

The privatization of Russian industry is intimately related to the conversion effort. Both policies are designed to promote a market economy and reduce the reliance of these enterprises on government subsidies and procurement.⁹¹ Given the prominence of the aerospace industry within the Russian military-industrial complex, privatization is likely to be particularly significant for the industry. In fact, the first large state enterprise to be privatized was the Saratov Aviation Plant (SAP), which was initially turned over to the enterprise's workforce by the Soviet government in 1991 and which completed its transition to an employee-owned joint stock company in February 1993.⁹²

III. STRATEGIES FOR DEVELOPMENT OF THE RUSSIAN AVIATION INDUSTRY—A CRITICAL ANALYSIS

A. CIVIL AIR TRANSPORTATION

The problems that have emerged in the Russian air transportation industry as a result of the fragmentation of Aeroflot and the emergence of start-up carriers clearly call for a multidimensional strategy. The joint US-Russian study, for example, made a total of thirty-one recommendations for improving the safety and quality of civil air transportation. Some of the major recommendations include: the rapid adoption of a Russian Air Code that clearly specifies the roles and responsibilities of state regulatory agencies; the provision of adequate financial resources to prevent the erosion of the quality and number of Department of

⁸⁹ Michael McFaul, *Corporate Governance: Who Should Oversee the Managers? Outside Investors*, CONVERSION: REP. ON RUSSIA'S DEF. INDUSTRY, Oct. 1994, at 1.

⁹⁰ Anders Aslund, *Russia's Success Story*, FOREIGN AFF., Sept./Oct. 1994, at 58.

⁹¹ One scholar notes that, while conversion is important, "[o]nly after privatization will individual enterprises make independent business decisions in their own interest." David Bernstein, *Conversion*, in CAN THE RUSSIAN MILITARY-INDUSTRIAL COMPLEX BE PRIVATIZED? EVALUATING THE EXPERIMENT IN EMPLOYEE OWNERSHIP AT THE SARATOV AVIATION PLANT 7, 9 (Michael McFaul ed., 1993) [hereinafter CAN THE RUSSIAN MILITARY-INDUSTRIAL COMPLEX BE PRIVATIZED?].

⁹² John Battilega, *The Saratov Aviation Plant*, in CAN THE RUSSIAN MILITARY-INDUSTRIAL COMPLEX BE PRIVATIZED?, *supra* note 91, at 41, 41. The SAP produced a wide variety of civil and military aircraft, including the Yak-11, MiG-15, and Yak-25 fighters, the Yak-27 reconnaissance aircraft, a variety of military aircraft, and the Yak-40 and Yak-42 commercial aircraft. *Id.* Between 1988 and 1993, the percentage of SAP's production capacity devoted to military products plummeted from 55% to just 6%. *Id.* at 42.

Air Transportation aircraft inspectors; the development of competent oversight and certification mechanisms; the establishment of Rosaeronavigatsia as the single state agency responsible for air traffic control; and the establishment of an independent accident investigation authority.⁹³

However, while the multidimensional strategies discussed by many commentators are needed to improve the performance and safety of civil aviation in Russia, emphasis must be placed upon the establishment of viable air carriers that will have the financial ability to purchase modern aircraft and adequate supplies and to comply with the proposed regulations. As a result, the consolidation of the hundreds of independent air carriers is a crucial factor in the reformation of the industry.

Vladimir Tikhonov, the deputy director of Aeroflot Russian International Airlines, summed up the necessity of consolidating Russian air carriers when he stated that "Russia should have only about 10 airlines, so the current total of 200 is way above a realistic number."⁹⁴ These comments are supported by Mark Jarvis, Moscow representative of the British investment bank Fleming's, who says that "[n]one of the baby Aeroflots has any money left for anything else once they've paid for fuel and maintenance. . . . They cannot even afford a new paint job for \$50,000, or to refurbish interiors, let alone acquire new aircraft."⁹⁵

One method for consolidating Russian air carriers may be to link the larger, more stable carriers, such as the Aeroflot spinoffs Aeroflot Russian International and Vnukovo and the start-up Transaero, with smaller, regional carriers. Since the large carriers generally have access to the more profitable routes, they could use those profits to cross-subsidize the less profitable, regional routes. Moreover, this consolidation could provide for an efficient linkage of international air routes with smaller, domestic routes.⁹⁶

While the establishment of linkages between the major international Russian air carriers and the regional airlines would pro-

⁹³ *Russia's Air Transportation System Needs Immediate Reform*, AVIATION DAILY, Oct. 17, 1994, at 79.

⁹⁴ Lenorovitz & Rybak, *supra* note 39, at 36.

⁹⁵ Boulton, *supra* note 40, at 7.

⁹⁶ ARIA officials have stated their desire to "harmonize" its international routes with those of regional airlines so that "we could together carry passengers from Frankfurt, for example, to Irkutsk, Chita, and so on." *Press Conference Devoted to the Corporatization of Aeroflot*, FED. NEWS SERV., Aug. 17, 1994.

mote the consolidation of civil aviation in Russia, such a strategy faces several obstacles. Most importantly, the major Russian carriers seem reluctant to establish close links with regional carriers. Anatoly Brylov, Deputy Director General for Legal Issues for ARIA, for example, has explicitly stated that any cooperation between ARIA and regional carriers would be carried out "on a purely contractual basis."⁹⁷

The reluctance of major Russian carriers to establish linkages with regional carriers is not surprising. Financially, Russia's major carriers face competition both among themselves on the most popular (and profitable) domestic routes⁹⁸ as well as with Western carriers on international routes.⁹⁹ Given this competition, the major carriers are wary of the costs of integrating hundreds of small, financially-insecure carriers into their routes. This is especially true considering the massive costs of replacing antiquated aircraft and refurbishing airport facilities that are projected over the next decade.¹⁰⁰

The difficulties faced by the major carriers in modernizing their own fleets, not to mention in supporting the modernization of the fleets of regional carriers, have been exacerbated by the Russian government's attempts to protect the domestic aerospace industry through the implementation of high import tariffs on Western aircraft and parts. In addition to aggravating

⁹⁷ *Id.*

⁹⁸ For example, Transaero and Vnukovo compete with each other on several domestic routes, including service between Moscow and Norilsk, a major northern mining city heavily dependent upon air transport, and Moscow-Sochi, a resort city of the Black Sea. *Transaero Expands Fleet, Plans U.S. Service in '95*, *supra* note 19, at 48.

⁹⁹ According to the international Civil Aviation Organization, ARIA, along with British Airways, was the only airlines that reported a profit in 1993. Victor Anoshkin, *Crashes, Competition Hit Russian Aeroflot Profits*, REUTER EUR. BUS. REP., Dec. 29, 1994. According to airline officials, however, profits in 1994 are expected to fall below 1993 levels as a result of increasing competition from foreign airlines seeking to take advantage of commercial opportunities in Russia. *Id.*

¹⁰⁰ While the major carriers may not be able to absorb the costs for modernization of Russian civil aviation as a whole, they have been able to make inroads into acquiring new aircraft. Transaero, for example, operates four leased Boeing 737-200s and two leased 757s and has plans to lease two more 757s and one more 767. *Transaero Adds 757's as 'Robust' Growth Continues*, FLIGHT INT'L, Nov. 23, 1994, at 12. ARIA has leased 5 Airbus A-310s (one of which crashed in March 1994, killing 75 people) and two Boeing 767s. *Dissecting the Aeroflot Breakup*, CHI. TRIB., Dec. 11, 1994, at C12. Moreover, ARIA has ordered 20 modern Ilyushin Il-96s (a mixture of Il-96-300s and Il-96Ms, which are equipped with Pratt & Whitney engines and avionics by Rockwell Collins) to replace its aging Tu-134 and Tu-154 jets. Anoshkin, *supra* note 99.

relations between Russia and the Western industrialized nations,¹⁰¹ the tariffs hinder the efforts of Russian carriers to acquire modern Western-built aircraft.¹⁰²

The negative effects of the tariffs on Russian carriers have been magnified by the shortcomings of the Russian aerospace industry. While older Russian transports, such as the Tu-134, Tu-154, and Il-62, suffer from numerous shortcomings that make them increasingly obsolete,¹⁰³ the emergence of the next generation of Russian-made transports has not gone smoothly. According to Ivan Mashkivsky, Head of the Department of Transportation's Flight Safety Branch, the Il-96-300 has proven to be unreliable.¹⁰⁴ Moreover, he claims that the aircraft suffers from a lack of flight simulators, ground test/monitoring equipment, and spare avionics kits.¹⁰⁵ Mashkivsky argues that the Tu-204 "suffers from all of these problems as well, and this aircraft

¹⁰¹ Russia had initially intended to enact the tariffs in March 1994, but pushed back their implementation following protests from U.S. industry and the Commerce Department. Jeffrey M. Lenorovitz & Boris Rybak, *Russia Imposes Tariffs on Imported Aircraft*, AVIATION WK. & SPACE TECH., July 25, 1994, at 35. The United States also raised the issue at the June 1994 summit between the United States and Russia but, according to American officials, the Russian Delegation "had nothing positive to say." *Id.* At the summit, one senior official reported President Clinton as telling President Yeltsin, "You need to show me and the U.S. Congress that trade's a two-way street. Your trade [with the U.S.] is doubling and tripling; ours [with Russia] is not. You now have a positive trade balance with us. We need lower tariffs." *No Progress on Russian Tariffs*, AVIATION WK. & SPACE TECH., Oct. 3, 1994, at 27.

¹⁰² According to Commerce Department officials, the tariffs apply to leased aircraft, which is significant given the widespread use of leasing by Russian carriers as a means of acquiring Western aircraft. Lenorovitz & Rybak, *supra* note 101, at 35. The tariffs include a 50% tax on large aircraft and a variety of duties on parts and components that run as high as 30%. *Id.*

¹⁰³ One of the major problems with these aircraft is simply age. The first Tu-134 flew in 1964, the first Il-62 in 1967, and the first Tu-154 in 1968. Shibata, *supra* note 24, at 167. Additionally, the older Russian transports suffer from severe maintenance and reliability problems and are much less fuel-efficient than newer Western aircraft, which greatly increases the operating costs of these transports vis-a-vis foreign aircraft. See Rybak & Lenorovitz, *supra* note 47, at 31. For example, in the summer 1993 peak season, only about half of Vnukovo's Tu-154 and Il-86 aircraft were available for service, with the other half being grounded, primarily due to mechanical problems and shortages of spare parts. *Vnukovo Airlines Pursues Independent Strategy*, *supra* note 27, at 42. These shortcomings are especially problematic in cases of international routes, where the aircraft often do not meet foreign regulations. The Tu-154, for example, has already been banned from Berlin because of its failure to meet regulations on noise emissions. *Dissecting the Aeroflot Breakup*, *supra* note 100, at 12.

¹⁰⁴ Rybak & Lenorovitz, *supra* note 47, at 31.

¹⁰⁵ *Id.*

hasn't even completed certification testing yet."¹⁰⁶ The difficulties surrounding the development of the IL-96 and the Tu-204 can be seen in Russia's efforts to have the planes certified by the FAA. According to the FAA officials, FAA certification of the IL-96 will take at least two or three more years to complete, and certification of the Tu-204 "is not even in the picture anymore."¹⁰⁷

These shortcomings are compounded by the rising prices for Russian-built aircraft as a result of the changes in Russia's economic structure. Prices have risen dramatically on not only newer Russian aircraft, but on older models as well. For example, GosNIIGA reports that the price for a Tupolev Tu-154 had doubled to approximately \$3 million by August 1994.¹⁰⁸ At the same time, there were more than eighty used DC-9s on the world market, ranging in price from \$750,000 (for the DC-9-10/20) to \$6.2 million (for the DC-9-50).¹⁰⁹

In addition to the financial disincentives, the major carriers are reluctant to establish close links with regional carriers given the latter's poor reputation for safety and passenger service. Despite the reputation of the Russian civil aviation industry as a whole, the major Russian carriers have made significant strides to improve service and have maintained adequate safety levels in order to boost their competitiveness against domestic and inter-

¹⁰⁶ *Id.* The Tu-204 and Il-96-300 have a common problem in the reliability and durability of its engines. Both aircraft are powered by the Perm PS-90A, which has a guaranteed life of only 500 hours. Alexander Velovich, *Aeroflot Competitor Looks for Investors*, FLIGHT INT'L, Sept. 7, 1994, at 27. The use of a foreign engine, such as the Rolls Royce RB.211-535, is a possible solution. *Id.* Another foreign engine that may be a solution to this problem is the Pratt & Whitney/Aviadvigatel/Perm Motors PS-90P. A joint venture with the U.S. company Pratt & Whitney, which was selected over the team of General Electric and Snecma, the PS-90P project seeks to uprate the PS-90A by improving its thrust, reliability, durability, and fuel efficiency. Lenorovitz, *supra* note 87, at 76. One writer sums up the negative effects of the tariffs upon the Russian civil aviation industry when he states that "Russian airlines are acquiring Western aircraft because they are seeking modern, efficient equipment that will make them more competitive in the international market. This is perfectly sensible because the majority of aircraft now available from the ex-USSR's aviation industry does not meet these basic, market-economy requirements." *Russia Must Correct Its Tariff Mistake*, AVIATION WK. & SPACE TECH., Sept. 12, 1994, at 82.

¹⁰⁷ Edward Phillips, *IL-103 to Pace U.S.-Russian Certification Program*, AVIATION WK. & SPACE TECH., Aug. 14, 1995, at 49.

¹⁰⁸ Rybak & Lenorovitz, *supra* note 47, at 31.

¹⁰⁹ *Id.*

national rivals.¹¹⁰ The major carriers, if anything, seek to distinguish themselves from the regional carriers in order to avoid the reputation of poor service and lack of safety.¹¹¹ This is an especially difficult task for ARIA given the fact that many smaller carriers that once made up parts of the old Aeroflot system continue to fly with Aeroflot colors and to utilize its airline designator.¹¹² As one ARIA manager stated, "Every time there's a crash or a technical problem with one of the 'Aeroflot' airplanes that is not ours, it hurts our image. . . . One of the best investments we could make is to buy lots of white paint and start covering over the Aeroflot markings on that 'sea' of airplanes circulating throughout the world."¹¹³

While the consolidation of the Russian civil aviation industry through the linking of the major Russian carriers with smaller regional carriers faces tremendous obstacles, the consolidation of ground facilities, at least in the Moscow area, may be more successful. The Department of Air Transportation (DAT), in fact, has backed a plan to merge the Moscow airports—Bykovo, Sheremetyevo, Domodedovo, and Vnukovo—into a single structure under one authority.¹¹⁴ The DAT believes that this plan will allow the airports to coordinate a strategy for development,

¹¹⁰ ARIA received a tremendous amount of negative publicity over the March 1994 crash of one of its Airbus A310 aircraft in Siberia. A subsequent investigation revealed that the pilot of the plane was giving his children flight lessons at the time of the crash. Boulton, *supra* note 40, at 7. However, ARIA's overall safety record was satisfactory. It had a spotless accident record for eight years prior to the Airbus crash. *Dissecting the Aeroflot Breakup*, *supra* note 100, at C12. The major airlines have taken steps to improve passenger service. Transaero, for example, offers service that is equal to, or better than, that offered by Western airlines through the use of multilingual cabin crews trained at Air France. Lenorovitz, *supra* note 49, at 45. ARIA has also made strides in improving passenger service, especially on routes served by its A310s. *Russia's 'New' Aeroflot Seeks Own Identity*, *supra* note 1, at 39.

¹¹¹ Efforts to distinguish itself from the reputation of the Russian civil aviation industry as a whole, particularly the lingering reputation of the old monolithic Aeroflot of the Soviet era, have been especially strong with Transaero. Sergey Grachev, Transaero's Director of Marketing, goes so far as to say that "[w]e refuse to hire anyone who has had more than five minutes' work experience with Aeroflot." Peter Galuszka & Patricia Kranz, *Russia's New Capitalism*, *Bus. Wk.*, Oct. 10, 1994, at 68.

¹¹² *Russia's 'New' Aeroflot Seeks Own Identity*, *supra* note 1, at 39.

¹¹³ *Id.*

¹¹⁴ D. Oksky, *Russia: Moscow Airports to Be Put Under Single Authority*, *REUTER TEXTLINE*, Nov. 30, 1994.

eliminate competition for international flights, and facilitate investments needed for reconstruction.¹¹⁵

However, while consolidation of the airports in Moscow may occur, Russia still faces the task of upgrading airport facilities throughout the country which, as discussed earlier, will cost approximately \$6.48 billion.¹¹⁶ Given the financial constraints faced by Russian air carriers and governments, Western carriers have been seen as an important source of funds for airport improvements in two respects. First, air routes from Europe and North America to the Far East through Russian airspace are particularly attractive to foreign carriers. For example, most flights from North America to Asia go through Anchorage, Alaska. By using routes through Russia, the distance of these flights is cut by almost twenty percent, resulting in a savings of about \$25,000 per transit.¹¹⁷ Similarly, a Europe to Hong Kong flight can save almost \$35,000 per transit using a trans-Siberian route.¹¹⁸ As a result of these routes, Russia has the potential to generate billions of dollars in hard currency from overflight charges.¹¹⁹

Despite the potential of Russian air routes as a source of hard currency, foreign carriers have indicated their unwillingness to pay exorbitant fees for transit through Russian airspace.¹²⁰ Most recently, the Association of European Airlines protested the payment of fees to Russia in addition to normal en-route air traffic control fees. The Association claimed that the fees were "clearly at odds with the ever closer relations between Western Europe and the Russian Federation."¹²¹

Second, direct investments by Western carriers is a potential source of revenue for the modernization of Russian facilities. It is unclear, however, whether foreign carriers will be willing to invest heavily in the refurbishment of Russian airports. For example, perhaps the most ambitious project to date was the involvement of British Airways in the modernization of Domodedovo Airport as part of its investment in the creation of

¹¹⁵ *Id.* The consolidation of the Moscow-area airports is particularly significant given the high volume of air traffic that utilizes the facilities. Currently, 27% of all domestic passenger traffic and 74% of all international flights utilize Moscow airports. *Id.*

¹¹⁶ Lenorovitz & Rybak, *supra* note 39, at 38.

¹¹⁷ Harry Eustace, *Defense Conversion Markets*, DEF. ELEC., June 1993, at 28.

¹¹⁸ *Id.*

¹¹⁹ *Id.*

¹²⁰ *European Airlines Protest 150 Mln Dlr Cost of Overflying Russia*, AFX NEWS, Nov. 30, 1994.

¹²¹ *Id.*

Air Russia. Recently, however, British Airways announced that the project had been suspended "indefinitely."¹²² According to British Airways, the project was not terminated completely but "has been put into cold storage until the political and economic situation in Russia stabilizes and becomes more conducive towards such a project."¹²³

As British Airways' suspension of the Air Russia venture demonstrates, the political and economic situation within Russia as a whole has serious implications for civil air transportation. The financial constraints faced by the major Russian air carriers and the Russian government, combined with the enormous costs of modernizing Russian airports and air fleets, has hindered efforts to overhaul the civil aviation system as a whole. This situation has been aggravated by the weaknesses of the Russian political system, which is evident in the lack of a strong, centralized regulatory mechanism to ensure the safety and reliability of the domestic civil aviation industry.

Foreign participation in the modernization of Russian civil aviation has also been hindered by the economic and political situation within Russia. The uncertainty surrounding the Russian economic system, most notably the lack of clear laws and regulations for commercial transactions and a prohibitive taxation regime, has created major obstacles for foreign investment.¹²⁴ Politically, the suspicion surrounding foreign investment within Russia, which many Russians see as exploitative,¹²⁵ has also discouraged foreign involvement in the civil aviation industry and has, to some extent, contributed to the economic obstacles towards foreign investment. Vladimir Zhirovsky's Liberal Democratic Party, for example, has adopted positions in favor of steep taxes on foreign companies, limits upon foreign control over economic ventures within Russia, and limits upon foreign access to natural resources.¹²⁶

¹²² *BA Shelves Plans for Air Russia 'Indefinitely,'* WORLD AIRLINE NEWS, Dec. 5, 1994, at 3.

¹²³ *Id.*

¹²⁴ Maurice R. Greenberg, *Privatizing Western Assistance to Russia*, WASH. Q., Autumn 1994, at 19.

¹²⁵ *Id.*

¹²⁶ Peter Galuszka, *The Reforms Have Lost*, BUS. WK., Dec. 27, 1993/Jan. 3, 1994, at 56. Galuszka claims that a flood of xenophobic or anti-market legislation from the Liberal Democrats or the Communists is a "worst-case fear" for foreign corporate leaders in Moscow. A more realistic fear, according to Galuszka, is that these forces will successfully split the Russian Parliament and obstruct efforts to address the economic obstacles to foreign investment. *Id.* at 57.

B. RUSSIA'S AEROSPACE INDUSTRY

The three major strategies for the development of the Russian aerospace industry that have received the most attention are the expansion of international arms sales, the conversion of defense-oriented industries to civilian production, and the privatization of state enterprises. Of course, these approaches are not mutually exclusive. In fact, one of the Russian government's primary motives for emphasizing arms sales is to allow Russia to maintain its industrial and technological base while, at the same time, acquiring hard currency that can be used to further the conversion process.¹²⁷ However, despite the attention devoted to these strategies, serious difficulties exist, particularly in terms of arms exports and defense conversion. These difficulties are likely to limit the effectiveness of these strategies in solving many of the problems faced by the Russian aerospace industry.

1. Arms Exports

As discussed in section II.B, the promotion of arms exports is a popular strategy for many Russian politicians and state enterprise managers. Despite its popularity, however, the policy of promoting international arms sales to prevent major dislocations in the aerospace industry has encountered three primary difficulties. First, and perhaps most important, the empirical evidence does not justify the optimistic assessments of many within the industry and within the Russian government. While the alleged decline in Russian arms exports is, in large part, an illusion,¹²⁸ the prospects for large-scale hard currency revenue from arms exports are slim.¹²⁹ Even accepting the most optimistic estimates concerning the volume of arms transfers, the hard-currency revenue from those sales barely begins to pay the costs for converting an estimated 15,000 defense-related industries.¹³⁰

¹²⁷ Gaddy & Allen, *supra* note 75, at 38.

¹²⁸ Russian arms exports have fallen dramatically from \$14.9 billion in 1989 to under \$2 billion in 1992. *Id.* Up until 1989, however, Soviet arms transfers were granted on easy credit terms and frequently were not paid for at all. *Id.* As Mikhail Malei explains, "we never received more than \$4 or \$5 billion in cash. All these arms were supplied for free to our ideological friends, countries which were hopelessly bankrupt." *Id.* One Russian commentator has suggested that the large drop in exports roughly reflects Russia's shift to conducting arms deals on a hard currency basis. *Id.*

¹²⁹ Steven Erlanger, *Russia's Workers Pay Price as Military Industries Fade*, N.Y. TIMES, Dec. 3, 1993, at A1, A19.

¹³⁰ *Id.*

This shortcoming is especially significant given the difficulties Russian arms manufacturers have had in concluding international sales for hard currency. An analysis of recent Russian arms transfers provides evidence of this fact. The sale of twenty-eight Mikoyan-Gurevich MiG-29 interceptors to Hungary in 1993, worth approximately \$760 million, was in exchange for the partial cancellation of former Soviet debts. Moreover, the sale of eighteen MiG-29s to Malaysia in June of 1994 was partially paid for in palm oil.¹³¹

The difficulties faced by Russian arms manufacturers in international transactions are likely to be exacerbated by the growing costs of Russian weapons. One of the Soviet Union's traditional advantages over Western military suppliers, as a result of its artificially low price of inputs, was in the area of price.¹³² However, with the economic reforms adopted by the Russian government, the price of raw materials and labor has skyrocketed for Russia's aerospace firms, thereby eliminating the Russian pricing advantage over Western suppliers.¹³³

Second, the large-scale export of Russian military hardware, even if it were possible, poses serious risks to Russian relations with the West. This is especially true in regards to sales to states with poor relations with the major powers. For example, Russia's sales of advanced rocket engines to India, quiet submarines and civil nuclear technology to Iran, and surface-to-air missiles and advanced fighter aircraft to China placed strains upon Russia's relations with the United States.¹³⁴

The risks posed to Russian relations with Western states by Russian arms exports to states such as Iran and China are especially serious given the inability of Russian arms manufacturers to distinguish themselves in terms of quality and, increasingly, in terms of price as well. Given these shortcomings, Russia's major advantage over Western competitors comes in the area of "non-traditional terms of sale," most notably choice of clients.¹³⁵ However, selling to states to whom other major arms producers are reluctant to sell, such as China and Iran, is precisely the type

¹³¹ Khripunov, *supra* note 36, at 82.

¹³² Gaddy & Allen, *supra* note 75, at 40.

¹³³ *Id.* For example, the price of gasoline for Russian industry has risen 100-fold recently. Markov, *supra* note 31, at 62. As a result of the rise in input costs, many end-product manufacturers have called for price controls on component and raw materials suppliers. Gaddy & Allen, *supra* note 75, at 41.

¹³⁴ Erlanger, *supra* note 129, at A18.

¹³⁵ Gaddy & Allen, *supra* note 75, at 39.

of policy that poses the greatest risks to Russia's relations with the West. Given the importance of these states as sources of foreign aid and investment, the aggressive promotion of arms exports could, in the long run, exacerbate the difficulties faced by the Russian aerospace industry.¹³⁶

Third, the extensive reliance upon arms sales to fund the Russian aerospace industry could end up discouraging the conversion to civilian production that such sales are supposed to support and could lead to a retreat from Russia's drive towards a market-based economy. Russia's past successes in arms production and exports were largely attributable to the privileged position of the military-industrial complex within the Soviet economic system.¹³⁷ An aggressive arms exports strategy, therefore, may require the Russian government to limit its economic reform efforts, thereby jeopardizing the long-term viability of the Russian aerospace industry. Researchers at the Brookings Institution have echoed this concern in their claim that the only practical policy that would allow Russia to compete successfully in the world arms market would be "to reestablish at least a partial command economy. At a minimum, this would mean a ban on exports of key raw materials, mandatory deliveries of certain materials to the defense complex, and possibly even restrictions on labor mobility."¹³⁸

As these three factors indicate, international arms sales represent, at best, a minor factor in promoting the development and transformation of the Russian aerospace industry. Not only are significant sales of Russian military hardware unlikely, but, even if possible, such sales could severely damage Russian relations with the advanced industrialized nations and could actually inhibit the development of a civilian-based aerospace industry within Russia.

2. *Defense Conversion*

The second major strategy for the development of the Russian aerospace industry, conversion from defense-related to civilian production does not possess the inherent limitations of the arms export strategy. Formidable obstacles, however, do exist to the

¹³⁶ While arms sales to China, India, and Iran have raised concerns in the West, Russia has refrained from selling arms to former client states that are under U.N. sanctions, such as Iraq and Libya. *Id.*

¹³⁷ See *supra* part I.B.

¹³⁸ Gaddy & Allen, *supra* note 75, at 41.

successful conversion of major portions of the industry, a fact which could have serious implications for the future of Russian aerospace.

One major difficulty with the conversion strategy is the fact that the conversion effort on the part of the Russian government, at least up to this point, has been limited. The financial resources devoted to the conversion process have been virtually non-existent given the enormity of the task. In 1993, for example, not a single new conversion program was initiated by the Russian government.¹³⁹ Moreover, the funds currently earmarked for ongoing conversion projects are extremely limited.¹⁴⁰ The draft state budget for 1994 provides for only 0.8 trillion rubles for defense conversion (less than \$500 million).¹⁴¹ Moreover, eighty percent of this amount may eventually be spent to subsidize salaries and maintain the industry's social infrastructure.¹⁴² According to Igor Khripunov, co-Director of the NIS Export Control Project and Senior Scholar at the University of Georgia's Center for East-West Trade Policy, the 1994 budget for conversion is "a budget intended to fill gaps, not to usher in a long-term, comprehensive program."¹⁴³

Much of the difficulty faced by the Russian government in implementing a more successful conversion policy can be traced to political instability, the lack of any master plan for conversion, and the emphasis upon international arms sales to boost hard currency earnings.¹⁴⁴ The ambivalence on the part of many within both the Russian government and the aerospace industry, however, has also contributed to the lack of success.¹⁴⁵ Col. Al-

¹³⁹ Khripunov, *supra* note 36, at 81.

¹⁴⁰ *Id.* Moreover, it is unclear how useful those funds that have been expended by the Russian government have been for the conversion of Russian defense industries. For example, of the 42 billion rubles (approximately \$100 million) allocated for conversion in Russia's 1992 budget, none went towards converting machinery or retraining workers. *Russia: Swords and Ploughshares*, *supra* note 78, at 52. The money that was made available to finance conversion projects was used almost exclusively to provide food and heat to towns such as Severodvinsk, which were totally dependent on military hardware for which demand has disappeared. *Id.*

¹⁴¹ Igor Khripunov, *Delusions v. Conversion*, BULL. ATOM. SCIENTISTS, July/Aug. 1994, at 11, 12.

¹⁴² *Id.*

¹⁴³ *Id.*

¹⁴⁴ Khripunov, *supra* note 36, at 81.

¹⁴⁵ Russian President Yeltsin believes that the Russian military initially sided with the leaders of the August 1991 coup against Gorbachev as a result of its "great sense of irritation" with conversion and reductions in the defense industry.

exander Vengerovsky, Deputy Speaker of the Duma and member of Zhirinovsky's LDP, for example, has argued that defense conversion was "a mistake from the outset."¹⁴⁶ Vengerovsky argues that an aggressive arms-export strategy would provide fifteen million defense workers with employment and asks, rhetorically, whether it is more profitable to export combat aircraft at \$3000 per kilogram, civilian aircraft for \$1000 per kilogram, or raw materials at an average of 20 cents per kilogram.¹⁴⁷ While the arms export strategy espoused by Vengerovsky is limited as a solution for the Russian aerospace industry, as discussed above, it does have considerable support given the limited success of conversion, the formerly privileged status of state enterprises devoted to aerospace production, and the fact that, even if conversion is successful, many aerospace enterprises will still be forced to close or scale back operations.¹⁴⁸

In addition to the difficulties encountered by the Russian government in implementing a far-reaching conversion program, the government's emphasis upon large state enterprises (both present and former) does not address those areas of the Russian economy that appear to be making the significant gains, most notably the growing entrepreneurial sector.¹⁴⁹ These entrepreneurs, rather than large state enterprises, have begun to lay the foundation for Russia's market economy in a number of key sectors, including transportation, retailing, high technology, and finance.¹⁵⁰

The shortcomings of the Russian conversion process have been exacerbated by the limited support of foreign actors. Despite widespread publicity, foreign participation in Russian defense conversion has been limited by both the conditions within Russia, including the policies of the Russian government and the shortcomings in the Russian economic system, and the policies of foreign governments.

As is the case with the civil aviation industry, political trends within Russia, and the actions of the Russian government itself,

Khripunov, *supra* note 141, at 12. Khripunov argues that "[a]dd to this equation the potentially explosive issue of mass unemployment, and it seems unlikely that any Russian government would risk political suicide by pushing a massive conversion program." *Id.*

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ See Richard W. Stevenson, *Russia's Arms Makers Try Change*, N.Y. TIMES, May 2, 1994, at D1.

¹⁴⁹ See Galuszka & Kranz, *supra* note 111, at 68.

¹⁵⁰ *Id.*

have hindered the participation of foreign actors in the conversion of the Russian aerospace industry. Tariffs on Western aircraft parts and components, commercial uncertainties, limits on foreign investment, and prohibitive taxation schemes, for example, threaten the availability of foreign investment. Given the tremendous costs of conversion and the critical role of foreign actors in the process, these policies that have the practical effect of limiting foreign investment further inhibit the emergence of a viable aerospace industry.¹⁵¹

The Russian government's difficulties in providing an environment conducive to foreign investment, and indeed domestic investment as well, in the conversion and privatization of Russian industry is perhaps most evident in the weakness of Russian law enforcement and the widespread presence of organized crime within Russia itself. In the last year, for example, scores of Russian executives, including seventeen bankers, were assassinated by organized crime forces.¹⁵²

The problem of organized crime poses a significant obstacle to foreign investment in the conversion process because, like the shortcomings of Russian commercial and labor law, it acts to prohibit commercial certainty and makes investment extraordinarily risky. As one scholar has argued, "[f]oreign investors and indigenous entrepreneurs alike are compelled to swim between the Scylla of extortion and the Charybdis of exorbitant taxation. In short, Las Vegas rules apply: Do not bring into the casino financial instruments or other valuables you are not prepared to lose."¹⁵³

¹⁵¹ Of course, many of the policies of the Russian government and the Russian political system have limited the ability of Russian entrepreneurs to promote the conversion process as well. For example, complaints about corrupt state bureaucrats and prohibitive taxation from entrepreneurs are as common, if not more common, than complaints regarding the problems of capital formation. Galuszka & Kranz, *supra* note 111, at 80. In fact, the avoidance of taxes, which can run up to 90% of profits, has become common. *Id.*

¹⁵² *Id.* The problems with crime have become so severe that many former KGB agents have gone into the private security business, creating private security forces that, in many respects, resemble military units. *Id.* Moreover, some businesses are believed to have responded to threats from organized crime with similar tactics. Valery Nezerov, Chairman of the Hermes Financial Group, for example, claims that "[o]ur security force is as strong as the organized criminal groups [U]nfortunately, we have had to demonstrate our force." *Id.*

¹⁵³ Mark Medish, *Russia: Lost and Found*, DAEDALUS, Summer, 1994, at 63, 83. An American lawyer who has successfully done business in Russia compares the task with surviving in a Wild West populated by former Soviet apparatchiks. *Id.*

The suspicion of many Russians towards foreign investment, as mentioned earlier, has also dissuaded foreign participation in the modernization of the Russian aviation industry. This is true in regards to aerospace as well as civil aviation. As one scholar has argued, "[t]o attract higher levels of foreign investment, [the Russian government] must reverse the growing notion among the Russian public that foreign companies are exploiting—rather than helping—the situation."¹⁵⁴ The suspicions of the Russian public surrounding foreign investment were evident in the remarks of Donat Ogorodnikov, Director of the Russian Central Institute of Aviation Motors (CIAM), a government organization which tests and certifies Russian aircraft engines, during a news briefing at the 1994 Moscow Aero and Industry Engine show. At the briefing, organized by French manufacturers Snecma and Turbomeca and the Russian design bureau Mikoyan to detail plans to offer the French Larzac powerplant on Mikoyan's MiG-AT advanced trainer, Ogorodnikov criticized the use of the French engine, saying,

I'm absolutely opposed to this project [T]he [Larzac] is an old engine, and I can't accept that we should allow our technology in Russia to go backwards. Soyuz [a Russian engine design bureau assigned to adapt the engine for the MiG-AT] should be working instead on modernizing our own engines.¹⁵⁵

These comments are indicative of the attitude of many Russian managers in the aerospace industry, who feel that excessive reliance on Western companies threatens both the capabilities and independence of Russian industry.¹⁵⁶

In addition to the political system and the outlook of many Russian citizens, effective participation by foreign actors in the conversion process has also been hindered by the policies of foreign governments, which have not only set aside limited funds in support of defense conversion, but have also targeted that aid in a manner that does little to promote long-term conversion. American assistance to Russia provides evidence of this fact. To this point, American assistance has had, at best, only a minor effect upon the conversion process.¹⁵⁷ The funds distributed under the Nunn-Lugar Act, until recently, were largely limited

¹⁵⁴ Maurice R. Greenberg, *supra* note 124, at 19.

¹⁵⁵ Lenorovitz, *supra* note 87, at 76.

¹⁵⁶ *Id.*

¹⁵⁷ Khripunov, *supra* note 36, at 81.

to feasibility studies carried out by U.S. contractors.¹⁵⁸ A Russian official responsible for defense conversion projects at the Ministry of Atomic Energy, for example, complained that U.S. assistance has yet to produce tangible results because, at the present moment, it is "at the level of talking."¹⁵⁹

Assistance from the other advanced industrialized states for the conversion process has been similarly limited. The European Union's Technical Aid to the Commonwealth of Independent States project, for example, set aside only \$14.6 million for conversion projects in 1993.¹⁶⁰ Japanese involvement in the conversion process, on the other hand, has been limited by political factors, the most notable of which is the continued Russian possession of the "Northern Territories," the Lesser Kurile islands which were seized by the Soviet Union at the end of World War II.¹⁶¹ One scholar has summed up Western assistance to Russia by stating that "[t]he mosaic of G7 aid to Russia and the other New Independent States is truly chaotic, and at times scandalously so The aid community has been extraordinarily slow in responding to the specific needs of the former communist countries."¹⁶²

3. Privatization

The privatization of state enterprises is a key element in Russia's transformation to a market economy. Under the Soviet system of state ownership, "de facto" property rights, the rights to the use and control of resources, gradually shifted away from

¹⁵⁸ *Id.*

¹⁵⁹ *Id.* A Congressional delegation to Russia in 1993 characterized Western assistance to Russia as proceeding at a "dangerously slow" pace. Greenberg, *supra* note 124, at 20. The same delegation reported a similar criticism following a 1994 visit, stating that "a strong sense of urgency—of potential international crisis and of our immediate obligation to avert such a crisis—is conspicuously absent in [the U.S.] delivery of assistance to Russia." *Id.*

¹⁶⁰ Khripunov, *supra* note 36, at 81.

¹⁶¹ Medish, *supra* note 153, at 66.

¹⁶² *Id.* at 69. Of course, more significant and effective Western assistance in the future could be hindered by opposition from Western competitors. For example, Boeing and McDonnell-Douglas have strongly opposed a request to the Export-Import Bank for loan guaranties for a project involving Pratt & Whitney and Rockwell-Collins. Bruce A. Smith, *Funding Key Challenge for CIS Joint Ventures*, AVIATION WK. & SPACE TECH., Aug. 14, 1995, at 40. According to Boeing and McDonnell-Douglas, loan guarantees for the project, which involves the production of the Il-96 transports, would effectively subsidize a foreign competitor and would encourage future requests for loan guarantees from American firms that provide components for other foreign aircraft manufacturers. *Id.*

state ministries to enterprise directors and managers, as well as local officials.¹⁶³ The privatization effort seeks to diminish the power of enterprise directors and managers, many of whom have fought to retain large state subsidies instead of responding to market demands, and transfer "de facto" property rights to real owners, thereby exposing enterprise management to the disciplines of the market.¹⁶⁴

While the privatization process, especially the privatization of small and medium-sized enterprises, has proceeded relatively smoothly, the privatization of larger enterprises has run into more difficulties.¹⁶⁵ Most significantly, there is disagreement concerning the corporate governance and ownership of privatized enterprises. Under the Basic Provisions of the Program for the Privatization of State and Municipal Enterprises in the Russian Federation, issued on December 29, 1991, sixty-five percent of a given firm's stock was to be sold on the market, allowing outside investors to gain majority ownership.¹⁶⁶ However, after vociferous criticism from many political officials, including criticism that the plan adversely affected the interests of workers by failing to ensure that they would have a substantial stake in the privatized enterprise, the Basic Provisions were revised in order to allow a second option, under which employees would be entitled to purchase fifty-one percent of the authorized stock through an initial period of closed subscription.¹⁶⁷

The revision of the Basic Provisions to facilitate the maintenance of insider control does serve to protect, at least theoretically, the interests of the workers. For example, in 1993 more than seventy-five percent of privatizing enterprises chose to privatize under Option Two, and estimates for 1994 are that insiders will acquire majority shares in about seventy-five percent of privatizing enterprises.¹⁶⁸ However, while Option Two ap-

¹⁶³ Sergei Markov, *Reform of Property Rights: The History, the Players, the Issues*, CONVERSION: REP. ON RUSSIA'S DEF. INDUSTRY, Aug. 3, 1993, at 2.

¹⁶⁴ McFaul, *supra* note 89, at 2.

¹⁶⁵ *Id.* at 1.

¹⁶⁶ Eva Busza, *Strategies of Privatization: The Options*, in CAN THE RUSSIAN MILITARY-INDUSTRIAL COMPLEX BE PRIVATIZED?, *supra* note 91, at 17, 23-24.

¹⁶⁷ *Id.* at 23. A third option was later added, which allows small groups of managers or individual directors the opportunity to gain and maintain close control over an enterprise. *Id.* at 24. However, this option is restricted to enterprises with a book value of fixed assets from 1 million to 50 million rubles and a work force of no more than 200 employees. *Id.* Given these limitations, therefore, Option Three is of less relevance to the large state aerospace enterprises.

¹⁶⁸ McFaul, *supra* note 89, at 1-2.

pears to facilitate the protection of workers' interests vis-a-vis outside investors, a continuation of insider control also facilitates the ability of enterprise managers and directors to maintain control over the newly-privatized entity, which could impede the movement towards a free-market system. As Michael McFaul points out, "[t]he provisions of Option Two are extremely effective in serving the interests of directors. They prevent outside investors from gaining majority ownership in enterprises, while putting shares the managers themselves do not buy into the hands of workers who are highly susceptible to their influence."¹⁶⁹

For the aerospace industry, therefore, privatization is an important step in the transformation to a market economy. Privatization alone may not be sufficient, however, if corporate insiders maintain control of the enterprise and continue to pursue policies that were reminiscent of the Soviet era: reliance on state subsidies, a high degree of managerial autonomy, and a resistance to the pressures of the market. Given the economic weaknesses of most of these enterprises, however, the alternatives—massive downsizing or bankruptcy in many cases—are not promising.¹⁷⁰

IV. CONCLUSION

The difficulties faced by the Russian aviation industry are not surprising given the fundamental political and economic transformation underway in Russia today. The successful development of both civil aviation and aerospace within Russia is intimately connected to the larger political and economic trends. Political stability and a viable commercial system, for example, are necessary to attract both domestic and foreign investment and to promote the difficult transition from a command economy to one based upon a free-market system. Until the basic political and economic shortcomings are adequately addressed, the Russian aviation industry will continue to face an uncertain future.

¹⁶⁹ *Id.* at 2.

¹⁷⁰ It is important to note that while many aerospace enterprises are operating in the red, the Russian government has applied its bankruptcy law sparingly. While this lack of enforcement has been a primary impediment to market reform and investment, Russian officials estimate that the law would qualify at least 70% of state enterprises as bankrupt. Brian Davenport, *Russia's Bankruptcy Law: Restructuring or Liquidation?*, CONVERSION: REP. ON RUSSIA'S DEF. INDUSTRY, Jan. 20, 1994, at 1.

